

09/830223
Rec'd PCT/PTO 18 NOV 2003

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INVENTOR: Takahiro Nakajima et al.
APPLICATION NO.: 09/830,223
FILED: July 13, 2001
TITLE: POLYMERIZATION CATALYST FOR
POLYESTER PRODUCTION, POLYESTER, AND
PROCESS FOR PRODUCING POLYESTER

The PTO is authorized to charge or credit any fees regarding this filing to
Deposit Account No. 11-0600.

PAPERS FILED:

1. Copy of Notification of Defective Response
2. Response to Notification of Defective Response
3. Copy of Amendments under the Article 34
4. Copy of Application (Specification, Claims & Abstract)



CTS/paa

11197/5

11/18/03

09/830223

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Amendments under the Article 34

Art 34Amdt

Still another objective of the invention is to provide molded articles, films, fibers, fibers for industrial materials, modified fibers and flame retardant fibers.

SUMMARY OF THE INVENTION

Now we discovered surprisingly that a coexistence of a first component and a second component, both of which have no sufficient polycondensation catalyst activities in themselves, resulted in a practically sufficient, increased activity as a polycondensation catalyst, thus establishing the invention.

Accordingly, the present invention is a polyester polymerization catalyst containing no antimony or germanium whose activity parameter (AP) fulfills Formula [1] shown below and the thermal stability degree (TD) of a polyethylene terephthalate polymerized using which fulfills Formula [2] shown below without removing or inactivating said catalyst:

$$[1] \text{ AP (min)} < 2T(\text{min})$$

wherein AP is a time (min) required for a polymerization using the catalyst at 275°C under reduced pressure of 0.1 Torr to obtain a polyethylene terephthalate whose intrinsic viscosity is 0.5 dl/g. T is an AP observed when using antimony trioxide as a catalyst. The added amount of antimony trioxide is 0.05 mol% as antimony atom based on an acid component in a resultant polyethylene terephthalate; and,

$$[2] \text{ TD (\%)} < 25$$

Art 34 Amend

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WHAT IS CLAIMED IS:

1. A polyester polymerization catalyst containing no antimony or germanium whose activity parameter (AP) fulfills Formula [1] shown below and the thermal stability degree (TD) of a polyethylene terephthalate polymerized using which fulfills Formula [2] shown below without removing or inactivating said catalyst:

$$[1] \text{ AP (min)} < 2T(\text{min})$$

wherein AP is a time (min) required for a polymerization using the catalyst at 275°C under reduced pressure of 0.1 Torr to obtain a polyethylene terephthalate whose intrinsic viscosity is 0.5 dl/g. T is an AP observed when using antimony trioxide as a catalyst. The added amount of antimony trioxide is 0.05 mol% as antimony atom based on an acid component in a resultant polyethylene terephthalate; and,

$$[2] \text{ TD (\%)} < 25$$

wherein TD is a % reduction in the intrinsic viscosity after keeping 1g of PET, whose initial intrinsic viscosity was 0.6 dl/g, in a glass tube as melt state under a nitrogen atmosphere at 300°C for 2 hours, after drying the PET at 130°C for 12 hours in vacuum.

2. The polyester polymerization catalyst according to Claim 1 comprising at least one metal-containing component selected from metals and/or metal compounds containing no antimony nor germanium and an organic compound component.

3. The polyester polymerization catalyst according to Claim

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PATENT
Docket No.: 11197/5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Takahiro Nakajima, et al.
Serial No. : 09/830,223
Filed : July 13, 2001
For : POLYMERIZATION CATALYST FOR POLYESTER
PRODUCTION, POLYESTER, AND PROCESS FOR
PRODUCING POLYESTER

Group Art Unit : 1755

Examiner : James W. Pasterczyk

COMMISSIONER FOR PATENTS
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ALEXANDRIA, VA 22313-1450

RESPONSE TO NOTIFICATION OF DEFECTIVE RESPONSE

SIR:

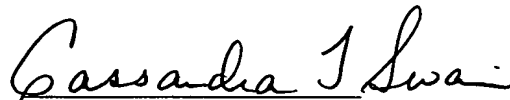
In response to the Notification of Defective Response mailed October 23, 2003, submitted herewith are an English Translation of the Application, an English Translation of the Amendment under Article 34, and a copy of the Notification.

The Office is authorized to charge the \$130.00 fee and any other fees under 37 C.F.R. 1.16 or 1.17 or credit any overpayment to Deposit Account No. 11-0600.

Respectfully submitted,

KENYON & KENYON

Date: 11/18/03


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UNITED STATES PATENT AND TRADEMARK OFFICE

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U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
09/830,223	Takahiro Nakajima	11197/5

INTERNATIONAL APPLICATION NO.

PCT/JP99/05866

LA. FILING DATE	PRIORITY DATE
10/25/1999	10/23/1998

23838
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CONFIRMATION NO. 3150

371 FORMALITIES LETTER



OC000000011080994

Date Mailed: 10/23/2003

NOTIFICATION OF DEFECTIVE RESPONSE

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as an Elected Office (37 CFR 1.495):

- Priority Document
- Original Specification filed on 07/13/2001
- Claims filed on 07/13/2001
- Oath or Declaration filed on 07/13/2001
- Initial Application Filing Fees filed on 07/13/2001
- Copy of the International Application filed on 07/20/2001
- English Translation of the IA filed on 07/20/2001
- Copy of the International Search Report filed on 07/20/2001
- Copy of IPE Report filed on 07/20/2001
- Information Disclosure Statements filed on 07/20/2001
- Oath or Declaration filed on 07/13/2001
- U.S. Basic National Fees filed on 07/20/2001
- Assignee Statement filed on 07/20/2001
- Priority Documents filed on 07/20/2001
- Power of Attorney filed on 07/20/2001

Applicant's response filed 07/20/2001 is hereby acknowledged. The following requirements set forth in the NOTIFICATION of MISSING REQUIREMENTS mailed 05/18/2001 have not been completed.

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

- Translation of the application into English. The current translation of the application into English is defective as described below. Note a processing fee will be required if submitted later than 30 months from the priority date.
 - defective translation, did not include any formula
- Processing fee for providing the translation of the application and/or the Annexes later than 30 months

ENTERED
10-27-03

from the priority date (37 CFR 1.492(f)).

Applicant is required to complete the response within a time limit of ONE MONTH from the date of this Notification or within the time remaining in the response set forth in the Notification of Missing Requirements, whichever is the longer. No extension of this time limit may be granted under 37 CFR 1.136, but the period for response set in the Notification of Missing Requirements may be extended under 37 CFR 1.136(a).

SUMMARY OF FEES DUE:

Total additional fees required for this application is \$130 for a Large Entity:

- \$130 for English translation surcharge required.

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

*A copy of this notice **MUST** be returned with the response.*

SHAKEEL AHMED

Telephone: (703) 305-3659

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
09/830,223	PCT/JP99/05866	11197/5

FORM PCT/DO/EO/916 (371 Formalities Notice)